Application No. 10/750,549
Amendment dated February 26, 2008
Response to Office Action of November 27, 2007

Atty. Docket No. 42P17433
Examiner PHU, Phuong M.
TC/A.U. 2611

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A method comprising:

receiving content from a host device for transmission via two or more tones in a multicarrier communication channel from two or more antenna(e); and

distributing elements of the received content across one or more of the antenna(e) and tone(s) to introduce full-order transmit diversity by cyclically dispersing elements of the received content across Mt transmit antennas, and a number (N) of multicarrier tones for each of a plurality of Rayleigh fading channel taps (L) , wherein the cyclical dispersion of the elements of the received content provides full-order transmit diversity according to $Mt{\cdot}Mr{\cdot}L$, where Mr is the number of receive antennae.

2.   (Original) A method according to claim 1, wherein the received content is a stream of quadrature amplitude modulation (QAM) symbols, received from the host device, or an application or agent executing thereon.

3-4.   (Canceled)

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5. (Currently Amended) A method according to claim [[4]] 1, wherein the cyclic dispersion is a function of delay spread [[L]] L_D.

6. (Currently Amended) A method according to claim [[4]] 1, wherein the cyclic dispersion of the elements is adaptively determined based, at least in part, on an observation of multipath conditions of the channel.

7. (Currently Amended) A method according to claim 6, wherein the cyclic dispersion is increased as a larger number of frequency blocks [[(L)]] (L_B) where there is a high delay spread.

8. (Currently Amended) A method according to claim [[4]] 1, wherein cyclic dispersion is decreased over a fewer number of frequency blocks to mitigate a danger of horizontal wraparound of the elements.

9. (Currently Amended) A method according to claim [[4]] 1, wherein a tone delay from antenna to antenna is great than one (1).

10. (Original) A method according to claim 9, wherein the tone delay from antenna to antenna is adaptively determined based, at least in part, on the spatial correlation, wherein the more correlated the fading on different antennas, the greater the tone delay from antenna to antenna.

11.   (Original) A method according to claim 2, wherein the received content

are complex symbols that are linear or nonlinear combinations of input QAM symbols.

12.   (Currently Amended) A method according to claim [[3]] 1, further

comprising:

        performing additional channel processing prior to transmission of the full-order

transmit diversity channel to a remote device.

13.   (Original) A method according to claim 12, the additional channel

processing comprising one or more of converting dispersed content from a time domain

to a frequency domain, introducing a cyclical prefix into the signal stream, and

performing front-end radio frequency (RF) processing prior to transmission via on or

more of the transmit antenna(e) Mt.

14.   (Original) A storage medium comprising content which, when executed

by an accessing device, causes the device to implement a method according to claim 1.

15.   (Currently Amended) An apparatus comprising:

        a diversity agent, to receive content from a host device and distribute elements of

the received content across one or more of a plurality of transmit antenna(e) and tone(s)

of a multicarrier communication channel to generate a transmit signal exhibiting full-

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order transmit diversity, wherein the diversity agent cyclically disperses elements of the received content across Mt transmit antennas, and a number (N) of multicarrier tones for each of a plurality of Rayleigh fading channel taps (L) to provide the full-order diversity transmit signal; and

a transmitter, responsive to the diversity agent, to transmit the generated transmit signal.

16.   (Canceled)

17.   (Original) An apparatus according to claim 15, the transmitter comprising:

an inverse discrete Fourier transform (IDFT) element, coupled to the diversity agent, to receive the transmit signal and convert it from a frequency domain to a time domain; and

a radio frequency (RF) processing element, coupled with the IDFT element, to transmit the generated transmit signal via a select one or more of a plurality Mt of transmit antennae.

18.   (Original) An apparatus according to claim 15, further comprising:

a memory to store content, at least a subset of which is executable content to implement a diversity agent; and

control logic, coupled to the memory and the transmitter, to access and execute at least a subset of the content stored in the memory to implement the diversity agent.

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19.　　(Original)　An apparatus according to claim 18, wherein the control logic is a baseband processor.

20.　　(Original)　An apparatus according to claim 18, wherein the control logic is an applications processor.

21.　　(Original)　An apparatus according to claim 15, wherein the apparatus is a transceiver.

22.　　(Original)　A storage medium comprising content which, when executed, causes an accessing machine to implement a diversity agent according to claim 15.

23.　　(Currently Amended)　A system comprising:

two or more dipole antennae; and

a diversity agent, to receive content from a host device and distribute elements of the received content across one or more of the two or more dipole antennae and tone(s) of a multicarrier communication channel to generate a transmit signal exhibiting full-order transmit diversity by cyclically dispersing elements of the received content across Mt transmit antennas, and a number (N) of multicarrier tones for each of a plurality of Rayleigh fading channel taps (L) , wherein the cyclical dispersion of the elements of the received content provides full-order transmit diversity according to $Mt \cdot Mr \cdot L$, where Mr is the number of receive antennae.

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24.   (Original) A system according to claim 23, further comprising:

a transmitter, coupled between the diversity agent and the dipole antennae, to receive one or more substreams of cyclically distributed content from the diversity agent and complete channel processing prior to transmission of the transmit signal from the dipole antennae.

25.   (Original) A system according to claim 24, the transmitter comprising:

an inverse discrete Fourier transform (IDFT) element, coupled to the diversity agent, to receive the one or more substreams of cyclically distributed content in a frequency domain and convert it to a time domain representation thereof; and

a radio frequency (RF) processing element, coupled to the IDFT element, to receive the time domain representation of the cyclically distributed content and amplify it for transmission from the dipole antennae.

26.   (Original) A system according to claim 25, the transmitter further comprising:

a cylical prefix insertion element, coupled between the IDFT element and the RF processing element, to introduce cyclical prefix into the time domain representation of the generated transmit signal.

27.   (Original) A system according to claim 25, wherein the system is a transceiver.